



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/777,436	02/12/2004	Kim Balfour	132809-2	4782

23413 7590 05/01/2006

CANTOR COLBURN, LLP  
55 GRIFFIN ROAD SOUTH  
BLOOMFIELD, CT 06002

EXAMINER
----------

POULOS, SANDRA K

ART UNIT	PAPER NUMBER
----------	--------------

1714

DATE MAILED: 05/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/777,436

Applicant(s)

BALFOUR ET AL.

Examiner

Sandra K. Poulos

Art Unit

1714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 April 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 3/15/04 8/23/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION*****Drawings***

1. The drawings are objected to because they are incorrectly labeled (see underlined portion below). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Specification***

2. The disclosure is objected to because of the following informalities: Paragraph 27, there is a comma missing for US Patent "5,916,970".
3. The use of the trademark Novacore has been noted in this application (Table 1). It should be capitalized wherever it appears and be accompanied by the generic terminology.

Art Unit: 1714

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

### ***Claim Objections***

4. Claims 1, 6, 11, 16, 17 are objected to because of the following informalities:

Claims 1, 16, 17: The phrase "a first poly(arylene ether) resin....a second *viscosity* poly(arylene ether) resin" is unclear because the word "viscosity" seems to interrupt the phrase, and should probably be amended to "a first poly(arylene ether) resin....a second poly(arylene ether) resin" because it is clear that the viscosities are difference for each resin.

Claims 6, 11: The units for melt viscosity are missing. There is support for Pascal-seconds in paragraph 15 of the specification.

Appropriate correction is required.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Art Unit: 1714

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

*Double Patenting 1*

5. Claims 1-12, 14-19 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-23 of U.S. Patent No. 6,576,700. Although the conflicting claims are not identical, they are not patentably distinct from each other because for the reasons below.

The claims of US 6,576,700 discloses a fire retardant, reinforced composition comprising: a blend of polyphenylene ether resins comprising a Component A and a Component B, wherein Component A comprises a polyphenylene ether resin having an intrinsic viscosity of at least 0.3 dl/g, as measured in chloroform at 25°C, and Component B comprises a polyphenylene ether resin having an intrinsic viscosity of less than 0.17 dl/g, as measured in chloroform at 25°C; a flame retardant in an amount of 7% to 20% by weight of the composition; and about 3% to 30% by weight of glass fiber, based on the total weight of the entire composition, wherein the composition exhibits an HDT value greater than about 139°C as determined by ASTM D648 (claim 14). Among non-fibrous inorganic fillers are clay, wollastonite, mica, talc, and others as listed in claim 23.

The difference between the current claims and the claims of US 6,576,700 is that (1) the currently claimed composition is "essentially free of plasticizers", (2) there is no indication of the viscosity at  $1500\text{ s}^{-1}$ , (3) there is not carbon fiber recited in the claims, and (4) articles of the composition are not claimed.

With respect to (1), according to the claim 20, plasticizers are optional components that may be additionally added to the composition in claim 14, indicating that the independent claim is free of plasticizers in that embodiment. Furthermore, when the any of the other components

Art Unit: 1714

are selected from the group in claim 20, for instance, impact modifiers, plasticizers would not be present since there is only one additional component.

In light of the above, it therefore would have been obvious to one of ordinary skill in the art that the composition in claim 14 would have met the viscosity requirements of the current claims and would have been free of plasticizers.

With respect to (2), example 1 in the specification has a shear viscosity at 300°C, 1500 s<sup>-1</sup>, of 149 Pa-s. The current claims measure the viscosity at 320°C which is sufficiently close enough to 300°C so that it would be not be expected that the viscosity would rise over 40 Pa-s and thus, US 6,576,700 would meet the limitation of having a composition viscosity under 190 Pa-s.

With respect to (3), claim 20 allows for the composition to optionally contain conductive fillers. In the specification carbon fibers are preferably included in the range of 7-10 wt% (col 9 line 65 to col 10 line 7). Therefore it would have been obvious to one of ordinary skill in the art to include carbon fibers in the composition since it is a preferable embodiment.

With respect to (4), US 6,576,700 discloses that the composition is useful as an injection molded product (col 1, lines 16-20) and indicates that the composition is used in finished articles (col 10, lines 54-57). Thus it would have been obvious to one of ordinary skill in the art to use the composition for articles.

6. Claims 1-12, 14-19 are directed to an invention not patentably distinct from claims 1-23 of commonly assigned US 6,576,700. Specifically, although the conflicting claims are not identical, they are not patentably distinct for the reasons set forth in paragraph 5 above.

The U.S. Patent and Trademark Office normally will not institute an interference between applications or a patent and an application of common ownership (see MPEP Chapter 2300).

Art Unit: 1714

Commonly assigned US 6,576,700, discussed above, would form the basis for a rejection of the noted claims under 35 U.S.C. 103(a) if the commonly assigned case qualifies as prior art under 35 U.S.C. 102(e), (f) or (g) and the conflicting inventions were not commonly owned at the time the invention in this application was made. In order for the examiner to resolve this issue, the assignee can, under 35 U.S.C. 103(c) and 37 CFR 1.78(c), either show that the conflicting inventions were commonly owned at the time the invention in this application was made, or name the prior inventor of the conflicting subject matter.

A showing that the inventions were commonly owned at the time the invention in this application was made will preclude a rejection under 35 U.S.C. 103(a) based upon the commonly assigned case as a reference under 35 U.S.C. 102(f) or (g), or 35 U.S.C. 102(e) for applications pending on or after December 10, 2004.

7. Claims 1-12 and 14-19 are rejected under 35 U.S.C. 103(a) as being obvious over US 6,576,700.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in

Art Unit: 1714

accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(I)(1) and § 706.02(I)(2).

For an explanation of the rejection, see paragraph 5 above.

### *Double Patenting 2*

8. Claims 1-3, 7, 8, 10, 15 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 3, 4, 22-25, 30-32, 34, 35 of copending Application No. 10/604,214 (published as US 2004/0106750). Although the conflicting claims are not identical, they are not patentably distinct from each other because of the following explanation.

The claims of 10/604,214 disclose a composition including a capped poly(arylene ether) resin prepared by capping a blend of a first poly(arylene ether) resin and a second poly(arylene ether) resin, wherein the first poly(arylene ether) resin and the second poly(arylene ether) resin have intrinsic viscosities differing by at least 0.1 deciliters per gram, measured at 25°C in chloroform. Claims 3 and 4 disclose that the first poly(arylene ether) resin has an intrinsic viscosity of about 0.05 to less than 0.20 deciliters per gram (claim 3) and the second poly(arylene ether) resin has an intrinsic viscosity of at least 0.20 to about 0.60 deciliters per gram (claim 4). The composition includes glass fibers (claim 24).

The difference between the current claims and the claims of US 6,576,700 is that the currently claimed composition is "essentially free of plasticizers".

According to claim 25, plasticizers are optional components that may be additionally added to the composition in claim 1, indicating that the independent claim is free of plasticizers in that embodiment. Therefore would have been obvious to one of ordinary skill in the art that

Art Unit: 1714

the composition would have met the viscosity requirements of the current claims and would have been free of plasticizers.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

9. Claims 1-3, 7, 8, 10, 15 directed to an invention not patentably distinct from claims 1, 3, 4, 22-25, 30-32, 34, 35 of commonly assigned Application No. 10/604,214.

Specifically, although the conflicting claims are not identical, they are not patentably distinct for the reasons set forth in paragraph 8 above.

The U.S. Patent and Trademark Office normally will not institute an interference between applications or a patent and an application of common ownership (see MPEP § 2302). Commonly assigned Application No. 10/604,214, discussed above, would form the basis for a rejection of the noted claims under 35 U.S.C. 103(a) if the commonly assigned case qualifies as prior art under 35 U.S.C. 102(e), (f) or (g) and the conflicting inventions were not commonly owned at the time the invention in this application was made. In order for the examiner to resolve this issue, the assignee can, under 35 U.S.C. 103(c) and 37 CFR 1.78(c), either show that the conflicting inventions were commonly owned at the time the invention in this application was made, or name the prior inventor of the conflicting subject matter.

A showing that the inventions were commonly owned at the time the invention in this application was made will preclude a rejection under 35 U.S.C. 103(a) based upon the commonly assigned case as a reference under 35 U.S.C. 102(f) or (g), or 35 U.S.C. 102(e) for applications pending on or after December 10, 2004.

Art Unit: 1714

***Claim Rejections - 35 USC § 102***

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

11. Claims 1-12, 14-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Patel in US 6,576,700 (the pre-grant publication of US 6,576,700 (2003/0023006) was cited as an X reference on the international search report).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

For an explanation of the rejection, see paragraph 5 above.

12. Claims 1, 2, 4, 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Laughner et al in US 5,258,455 (cited as an X reference on the international search report).

Laughner discloses a first polyphenylene ether with an intrinsic viscosity of greater than 0.35 dl/g, a second polyphenylene ether having an intrinsic viscosity of 0.15-0.35 dl/g, and an

Art Unit: 1714

aliphatic olefin polymer (col 1, lines 39-46; col 2, lines 27-30; col 3, lines 30-33). An essential feature of the first polyphenylene ether is its relatively high intrinsic viscosity as compared to the second polyphenylene ether (col 3, lines 25-29). Laughner does not teach or suggest using plasticizers with the composition and thus can be considered free of plasticizers. In the examples the ratio of first PPE to second PPE is 1:1 (Table 1, Table 2). In the nonpreferred embodiments (Table 2, C7, C8), the amount of first PPE to second PPE is 1.5:1 and 3:1.

Therefore Laughner anticipated the cited claims.

13. Claims 1, 2, 7, 8-10, 14, 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Yeager et al in US 2001/0053820.

Yeager discloses a blend of at least two capped polyarylene ethers with other polymer components (para 4, 9, 31) wherein the polyarylene ethers have a viscosity of 0.15-0.3 dl/g. The polyarylene ethers may have different intrinsic viscosities (para 9). Additionally there is an polyarylene ether with a high intrinsic viscosity of at least about 0.3 dl/g (para 59). Glass fiber and inorganic filler such as calcium carbonate are added (para 64-74, 124). Impact modifiers are present (para 83, 129, 132). Carbon fibers are among preferred fiber reinforcing filler (para 77-78). Yeager discloses molding of an article from the composition (para 2). Yeager does not teach or suggest using plasticizers with the composition and thus can be considered free of plasticizers.

Therefore, Yeager anticipates the cited claims.

#### ***Claim Rejections - 35 USC § 103***

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 1714

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

15. Claims 13 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Patel as applied to claims 1-12, 14-19 above, and further in view of Katayose et al in US 5,218,030.

The discussion with respect to Patel in paragraphs 5 & 11 above are incorporated herein by reference.

Patel does not disclose the composition in an article that is part of an electronic packaging handling system or a dissipation factor under 0.02.

Katayose discloses a PPE resin composition that is used in electronic industries for applications such as circuit boards (col 4, lines 28-48) because of its excellent fire retardance and good electrical properties and low dissipation factor (col 1, lines 29-41). The dissipation factor is measured at 1 MHz with ASTM D150 and is under 0.02 (col 27, lines 6-10; Table 2). The composition also contains reinforcing agents such as glass fabrics or natural or synthetic fibers (col 12, lines 7-32).

It would have been obvious to one of ordinary skill in the art to use the composition disclosed by Patel in electronic products because it is demonstrated by Katayose that such similar compositions comprising PPE and reinforcing materials have good electrical properties and have low dissipation factors. Besides being compositionally similar, both compositions are

Art Unit: 1714

disclosed as having flame retardant properties, thus there is a reasonable expectation for success for using the composition by Patel in electronic articles.

### ***Conclusion***

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Van de Meer et al (US 5,089,562) discloses a mixture of PPE with an intrinsic viscosity of at least 38 ml/g and a PPE with an intrinsic viscosity of not more than 33 ml/g. The composition can contain additives such as glass fibers.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sandra K. Poulos whose telephone number is (571) 272-6428. The examiner can normally be reached on M-F 7:30-4:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SKP  
Sandra K. Poulos

*Vasu Jagannathan*  
VASU JAGANNATHAN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700